

Dual Compartment Plastic Bag

United States Utility Non-Provisional Patent Application

Invented by Steven Solder

DUAL COMPARTMENT PLASTIC BAG

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5 BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to containers for storage, particularly to bags that have
10 reusable and resealable dual compartments such that each compartment can be separately sealed and opened.

Description of Related Art

15 Bags have been used for many purposes, including storing, sorting, organizing, packing, packaging, and preserving various contents. Plastic bags provide a reasonably good means for minimizing oxygen flow to bacteria, helping to keep food in a nearly airless environment that reduces bacteria growth. Bags have been developed for cool and frozen food storage. They also offer a thin and light-weight means for organizing and storing a
20 large variety of things, and they are usually transparent, offering immediate identification of the contents. Bags are used for packaging and transporting consumer goods from many different types of stores. When filled with air and sealed, plastic bags can serve as light-weight packing materials. For all these purposes, plastic bags are available in many sizes, thickness, weights, colors, and shapes.

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In prior art, single-compartment bags have been made in various shapes to provide dual purpose utilization. U.S. Pat. No. 4,938,608 teaches an ultra-thin plastic bag for produce with a larger upper compartment and a smaller lower compartment. The bag is not sealable, nor is there any division between these compartments, but the shape allows a
30 consumer to place larger produce in the upper section of the bag and smaller produce in the bottom section of the same bag. U.S. Pat. No. 5,816,709 teaches a leak-proof single

compartment traveling toiletry bag, having several seals, a double-fold, and optional absorbent pad. U.S. Pat. No. 6,020,013 teaches a single-compartment food freezer bag having a triple-seal closure that creates separate compartments when the seals are closed. U.S. Pat. No. 6,332,712 teaches a flexible resealable single-compartment bag that can be
5 folded over for transport. Single-compartment bags do not allow for segregation of the different items held within the compartment, nor the easy retrieval and use of different items.

Prior art has also developed a number of bags with dual compartments that are intended
10 for specific purposes. U.S. Pat. No. 5,380,093 teaches a sealable bag for draining and storing washable goods in which the goods are placed in a main storage chamber and water drains into a small channel along the bottom of the bag and is expelled through a side channel. U.S. Pat. No. 5,958,483 shows another example of a bag intended for the collection and segregation of food debris from the main compartment holding the stored
15 food, but the collection compartment is adhered to an outer cardboard box and cannot be accessed without cutting or tearing the bag. U.S. Pat. Nos. 4,155,453 and 4,262,801 teach bags for holding fragile objects inside inflatable outer chambers. The dual chambers of the bags developed in prior art are shaped and made for specific functions and are neither capable of containing other objects nor are accessible through resealable openings.

20 Several large U.S. companies produce bags having sealing strips, and there have been many patents granted for sealing closure strips, for example, U.S. Pat. Nos. 3,416,199, 4,186,786, 4,212,337, 4,285,105, 4,362,198, 4,363,345, 4,578,813, 4,791,710, 4,829,641, 4,863,286, 4,878,763, 5,007,143, 5,010,627, 5,017,021, 6,033,113, 6,185,813, and
25 6,581,253. The seals for plastic bags have consisted of two strips, one along each side of the bag opening, capable of being squeezed together either manually or by a slider moving over both strips from one end along their lengths to the other end. One strip has an undercut groove or series of grooves into which snaps, when the strips are pressed together, a corresponding male element or series of such elements molded onto the other
30 strip, to give a notional seal along the now closed bag access end. These seals have been made in various configurations in attempts to make them fluid- or gas-tight, and have

even been developed for vacuum-packing. However, the sealing devices in prior art are used to close only one opening for a bag, not two separate compartments.

5 The bags in prior art do not provide a means for completely segregating the materials in each compartment from each other, nor a means for closing and opening each compartment separately from the other. Nor do the bags in prior art contemplate using the dual compartments of the same bag for items that are unrelated, such as food and non-food items. For purposes of storing, transporting, or otherwise keeping items that need to be separated, it is necessary to use two, unconnected bags or two separate bags that are
10 stapled, glued, or otherwise connected together in some manner, in which case the bags cannot usually be used more than once.

Many products consist of two elements that are best kept apart in sealed compartments until utilized. Examples include dried and packaged foods having two distinct elements
15 such as noodles and sauce or rice and spice that must be added at different times in the cooking process, deli sandwiches that become soggy if the onions, lettuce, and tomatoes are added more than a few minutes before eating, and do-it-yourself consumer craft and hardware projects having parts that can break or scratch each other if kept in a single compartment. These products would be most efficiently packaged in a single bag with
20 dual chambers that can be opened independently of each other.

There is also a need for a cheap, inexpensive, disposable bag that can be used to separate two unrelated items, such as food and non-food items, in two connected compartments that open and seal independently of each other. Such a bag would be useful for
25 transporting a person's lunch and the tools they need on a job, a hiker's compass and first aid supplies, or any number of items that are best kept separate so as not to be contaminated or mixed in with the items in the second chamber.

BRIEF SUMMARY OF THE INVENTION

The present invention comprises a plastic bag having resealable dual compartments comprised of three layers of plastic that are sealed by heat or another permanent means
5 on three sides with an opening for each compartment on the fourth side. Each opening can be closed separately by means of a reusable sealing device. This sealing device is comprised of three interlocking sealing strips, two of which are along the opening on the outer layers of the plastic bag and one of which consists of a single strip with mirror image interlocking sides attached along the middle layer of the plastic bag in such
10 position that each of the interlocking strips on the outer layers can be enmeshed with its corresponding side of the sealing strip on the middle layer to close one or both of the bag compartments.

An object of the present invention is to provide a plastic bag having dual compartments
15 that are easily accessible at the top of the bag through separate openings for the placement of items inside.

Another object of the present invention is to provide a dual compartment plastic bag in which the compartments are connected in such a way as to prevent them from slipping, sliding, or swinging against each other but rather in a way that keeps them stable in
20 relation to each other, and yet capable of being sealed completely separately from each other.

A further object of the present invention is to provide a plastic bag having dual
25 compartments that are separately intact such that the items inside are completely segregated from each other and cannot be contaminated by each other when the compartment is sealed.

Another object of the present invention is to provide a dual compartment bag that is
30 simple in construction, cost-efficient to manufacture, and packageable and storeable within the same wholesale and retail structure as now exists for resealable plastic bags.

Yet another object of the present invention is to provide a bag that can be utilized with any of various sealing devices that are preferred or protected by different manufacturers, with or without modifications for the dual closure of this invention.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 Front view of present invention.

10 **Fig. 2 Top view of present invention.**

Fig. 3 Cutaway side view of present invention.

Fig. 4 Enlarged view of seal closure.

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DETAILED DESCRIPTION OF THE INVENTION

In Figure 1, the present invention is shown from the front view. The container will look approximately the same from both front and rear views. The container is comprised of three layers, as shown in Figures 2 and 3, of flexible plastic. The plastic material may be opaque or translucent, may be imprinted with labeling, may be of any color, and may range in thickness. It is noted that lesser thickness serve for food storage, while greater thicknesses are required for storage of hard goods. The plastic container may be made in a plurality of sizes. It may be made of any material, in any thickness, and in any size as preferred by different manufacturers of plastic bags.

Said layers are attached, such as by means of heat sealing, at the sides and the lower side. A reusable sealing closure having interlocking strips is attached from edge to edge along the upper side opening of the container. From the front and rear views, the sealing closure is seen from the flat side of the closure and appears as a strip attached to or embedded in said front or rear layers at approximately $\frac{1}{4}$ to $\frac{1}{2}$ inch below the top of the layer. The

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upper most edge of the middle layer can be seen extended approximately $\frac{1}{4}$ to $\frac{1}{2}$ inch beyond the front and rear layers. This extension facilitates the opening of the container such that the user can grip the middle layer separately from the other layers, and next can pull on the front or rear layer to open the respective compartment independently of the other compartment.

In Figure 2, the present invention is shown from a top view, from which the three-layer construction of the container becomes apparent. It can be seen that there is a front, middle, and rear layer, creating 2 separate but connected chambers in the container. The layers are attached at the side edges by a means of attachment, such as heat-sealing.

Figure 3 shows a cutaway view of the present invention from one side. The front and rear (outer) layers can be seen on either side of the middle (inner) layer of the container. These layers are attached at the lower-most edge by a means of attachment, such as heat-sealing, and remain open at the upper-most edge. The middle layer is extended approximately $\frac{1}{4}$ to $\frac{1}{2}$ inch longer than the front and rear layers to facilitate opening the container. The user can grip the longer edge and then grip the shorter edge of either chamber to pull open its seal closure while leaving the other chamber closed.

In the cut-away view in Figure 3, the sealing closure is also shown in the cut-away at the upper edge of the container. In its preferred embodiment, the interlocking sealing closure consists of three strips attached by a means of attachment to each of the layers. The two strips attached to the front and rear layers (outer layers) are planar on the strip side facing the layer and have an interlocking configuration on the side facing away from the layer. The third strip attached to the middle (inner) layer has interlocking configurations facing outward on both sides of the strip, such that the interlocking configurations match the interlocking strips on the front and rear sides of the chamber. When pinched together, said seals form a closure of one or both of the chambers.

Referring to Figure 4, an enlarged view of the seal closures is shown. It can be seen in this Figure that the two outer closure strips are planar on the side facing the front and rear

layer of the container, while the middle strip that is attached to the middle layer of the container is capable of interlocking on both sides of the strip. The preferred embodiment of this closure strips would be to have reusable interlocking seal closures that can be manually squeezed shut and opened. The middle seal strip could be a single integral unit
5 attached to the middle layer of the container, or it could be two closure strips with planar surfaces that are attached at their planar sides on either side of the middle layer, sandwiching the plastic layer between them. It would also be possible to offset one set of the sealing closures such that one set is placed slightly lower than the other set, although such an offset is not preferred because it makes the manufacturing process more
10 complicated and reduces ease of use and attractiveness of the container.

While the present invention has been described in terms of several preferred embodiments, it is not intended to limit the invention to the particular forms set forth. On the contrary, the present invention is intended to cover such alternatives, alterations,
15 modifications, and equivalent structures and devices as may be included within the spirit and scope of the invention as defined within the appended claims.